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10/797,358	03/10/2004	Mei-Yuh Hwang	M61.12-0633	4338

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EXAMINER
JACKSON, JAKIEDA R

ART UNIT	PAPER NUMBER
2626	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-17_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-17_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _10 March 2004_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some * c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim 1 is objected to because of the following informalities:

- "comprising at least on letter", should be --comprising at least one letter--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   **Claims 1-15** rejected under 35 U.S.C. 102(e) as being anticipated by Coorman

et al. (PGPUB 2005/0182629), hereinafter referenced as Coorman.

Regarding **claim 1**, Coorman discloses a method of segmenting words into

component parts, the method comprising:

determining mutual information scores for graphoneme units, each graphoneme

unit comprising at least one letter in the spelling of a word (grapheme to phoneme;

column 2, paragraph 0024 and column 6, paragraph 0083 with column 9, paragraph

0138 and column 10, paragraph 0158);

using the mutual information scores to combine graphoneme units into a larger

graphoneme unit (concatenator; column 3, paragraph 0028 with column 8, paragraph

0107); and

segmenting words into component parts to form a sequence of graphonemes

(segment; columns 3-4, paragraph 0043 with 8, paragraph 0107).

Regarding **claim 2**, Coorman discloses a method wherein combining

graphonemes comprises combining (concatenating) the letters of each graphoneme to

produce a sequence (sequencing) of letters for the larger graphoneme unit and

combining the phones of each graphoneme to produce a sequence of phones for the

larger graphoneme unit (column 1, paragraph 0009 with columns 3-4, paragraph 0043

and column 10, paragraph 0152 with column 11, paragraph 0164).

Regarding **claim 3**, Coorman discloses a method further comprising using the

segmented words to generate a model (modeling; column 3, paragraphs 0038-0039).

Regarding **claim 4**, Coorman discloses a method wherein the model describes

the probability of a graphoneme unit given a context within a word (phonetic context;

column 2, paragraphs 0019 and 0026 with column 6, paragraph 0084).

Regarding **claim 5**, Coorman discloses a method further comprising using the

model to determine a pronunciation of a word given the spelling of the word

(pronunciation; column 6, paragraph 0091 and column 10, paragraph 0153 with column

11, paragraph 0163).

Regarding **claim 6**, Coorman discloses a method wherein using the mutual

information scores comprises summing at least two mutual information scores

determined for a single larger graphoneme unit to form a strength (column 9, paragraph 0138 and column 9, paragraph 0138).

Regarding **claim 7**, Coorman discloses a computer-readable medium having computer-executable instructions for performing steps comprising:

determining mutual information scores for pairs of graphoneme units found in a set of words, each graphoneme unit comprising at least one letter (grapheme to phoneme; column 2, paragraph 0024 and column 6, paragraph 0083 with column 9, paragraph 0138 and column 10, paragraph 0158);

combining the graphoneme units of one pair of graphonome units to form a new graphoneme unit based on the mutual information scores (concatenator; column 3, paragraph 0028 with column 8, paragraph 0107); and

identifying a set of graphoneme units for a word based in part on the new graphoneme unit (segment; columns 3-4, paragraph 0043 with 8, paragraph 0107).

Regarding **claim 8**, Coorman discloses a computer-readable medium wherein combining the graphoneme units comprises combining (concatenate) the letters of the graphoneme units to form a sequence (sequence) of letters for the new graphoneme unit (column 1, paragraph 0009 with columns 3-4, paragraph 0043 and column 10, paragraph 0152 with column 11, paragraph 0164).

Regarding **claim 9**, Coorman discloses a computer-readable medium wherein combining (concatenate) the graphoneme units further comprises combining the phones of the graphoneme units to form a sequence (sequence) of phones for the new

gaphoneme unit (column 1, paragraph 0009 with columns 3-4, paragraph 0043 and column 10, paragraph 0152 with column 11, paragraph 0164).

Regarding **claim 10**, Coorman discloses a computer-readable medium further comprising identifying a set of graphonemes for each word in a dictionary (dictionary; column 1, paragraph 0002 and column 10, paragraphs 0152-0157).

Regarding **claim 11**, Coorman discloses a computer-readable medium further comprising using the sets of graphonemes identified for the words in the dictionary to train a model (column 1, paragraph 0002 and column 10, paragraphs 0152-0157).

Regarding **claim 12**, Coorman discloses a computer-readable medium wherein the model describes the probability of a graphoneme unit appearing in a word (phonetic context; column 2, paragraphs 0019 and 0026 with column 6, paragraph 0084).

Regarding **claim 13**, Coorman discloses a computer-readable medium wherein the probability is based on at least one other graphoneme unit in the word (phonetic context; column 2, paragraphs 0019 and 0026 with column 6, paragraph 0084 and columns 8-9, paragraphs 0123-0126 and column 15, paragraphs 0206-0208).

Regarding **claim 14**, Coorman discloses a computer-readable medium further comprising using the model to determine a pronunciation for a word given the spelling of the word (pronunciation; column 6, paragraph 0091 and column 10, paragraph 0153 with column 11, paragraph 0163).

Regarding **claim 15**, Coorman discloses a computer-readable medium wherein combining graphoneme units based on the mutual information score comprises

summing at least two mutual information scores associated with a new graphoneme unit

(column 9, paragraph 0138 and column 9, paragraph 0138).

4.   **Claims 16-17** are rejected under 35 U.S.C. 102(e) as being anticipated by

Okimoto et al. (PGPUB 2005/0256715), hereinafter referenced as Okimoto.

Regarding **claim 16**, Okimoto discloses a method of segmenting a word into

syllables, the method comprising:

segmenting a set of words into phonetic syllables (phonetic syllables) using

mutual information scores (columns 12-13, paragraphs 0198-0199);

using the segmented set of words to train a syllable n-gram model (N-gram

syllables; column 2, paragraph 0023 with column 3, paragraph 0050 and column 4,

paragraphs 0054-0057); and

using the syllable n-gram model to segment a phonetic representation of a word

into syllables via forced alignment (alignment of syllables; column 1, paragraph 0016).

Regarding **claim 17**, Okimoto discloses a method of segmenting a word into

morphemes, the method comprising:

segmenting a set of words into morphemes using mutual information scores

(columns 6-7, paragraphs 0099-0116 columns 6-7, paragraphs 0099-0116);

using the segmented set of words to train a morpheme n-gram model (columns

6-7, paragraphs 0099-0116 and columns 11-12, paragraphs 0181-0192); and

using the morpheme n-gram model (N-gram) to segment a word into morphemes

via forced alignment (morphemic; columns 6-7, paragraphs 0099-0116 and column 3,

paragraph 0052 with column 4, paragraph 0055).

Conclusion

5.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jakieda R. Jackson whose telephone number is 571-

272-7619. The examiner can normally be reached on Monday, Tuesday and Thursday

7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRJ
June 7, 2007

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENT: